

IV. REMARKS

United States Serial No. 10/787,507, was filed on February 26, 2004. In view of the remarks set forth herein, Applicants respectfully request reconsideration and allowance of claims 1, 3, 5-9, 12-17, 19-23 and 26-32.

Restriction Requirement

The Examiner required restriction under 35 U.S.C. § 121 to one of the following:

Group I: claims 1-32, drawn to a strength improvement admixture, classified in class 524, subclass 186.

Group II: Claims 33-50, drawn to a method of making a cementitious composition, classified in class 106, subclass 819.

In Response A to the Election/Restriction Requirement, an election with traverse was made to prosecute the invention of Group I, and the species of N,N,N',N'-tetra(hydroxyethyl)ethylenediamine, which reads on claims 1-3, 5-9, 12-17, 19-23 and 26-32.

In Response B, Applicants confirmed the election of claims 1-3, 5-9, 12-17, 19-23 and 26-32 of Group I for prosecution in the present invention, and reserved the right to file claims 33-50 in one or more divisional applications.

The Office Action dated December 5, 2006 noted that a complete reply requires the cancellation of all withdrawn claims. Applicants have, therefore cancelled claims 33-50 without prejudice and subject to the right to file the same in one or more divisional applications. Applicants have indicated in the claim listing the withdrawn status of claims 4, 10, 11, 18, 24, and 25. However, as Applicants submit that the amendments and remarks herein overcome the rejections to the elected claims, from which they depend, Applicants request rejoinder and allowance of these withdrawn species claims of Group I pursuant to MPEP 821.04(a). Applicants respectfully submit that this is a complete reply to the final rejection.

35 U.S.C. §102(b)

Claims 1-3, 5-9, 12-17, 19-23 and 26-32 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,290,770 ("Moreau"). It is alleged in the Office Action of July 14, 2006 at page 3 that Moreau discloses an admixture for cementitious compositions comprising (1) a polycarboxylate dispersant, (2) polyhydroxylalkylamine (specifically tetra(hydroxyethyl)ethylenediamine), and (3) a claimed set retarder (a carboxylic acid salt in Table 1A).

Applicants respectfully traverse this rejection. To establish anticipation of a claim, each and every element as set forth in the claim must be found, either expressly or inherently described, in the single prior art reference. *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Moreau does not disclose the use of a set retarder in combination with a polycarboxylate dispersant and a strength improvement additive. The Office Action specifically refers to the first two columns of Table 1A as teaching all three components. Column 10, Lines 54-64. The table includes, in addition to other additives, (1) a polymer, (2) a polyhydroxylalkylamine, and (3) a carboxylic acid salt. However, carboxylic acid salts are not set retarders. Carboxylic acid salts are accelerators. The present application, as well as Moreau, discloses that carboxylic acid salts of alkali metal, alkaline earth metal, or aluminum are preferred accelerators. Specification Page 24, Lines 12-19; Moreau Column 9, Lines 19-34.

The Final Office Action mailed December 5, 2006 notes that the present application defines set retarding additives as including "hydroxylated carboxylic acids, borax, gluconic, tartaric and other organic acids and their corresponding salts," and that claim 12 also recites carboxylic acid salts as retarding additives.

Applicants respectfully submit that the inclusion of the phrase "and their corresponding salts" was merely a typographical error, and that one of ordinary skill in the art would recognize the mistake upon reading the description. The description defines carboxylic acid salts as accelerators. Page 24, lines 12-19. "The carboxylic

acid salts have the general formula RCOOM wherein R is H or C1 to about C10 alkyl, and M is alkali metal or an alkaline earth metal or aluminum. Preferred are carboxylic acid salts of Na, K, Mg, Ca and Al. A preferred carboxylic acid salt is calcium formate.” Page 25, lines 15-18.

Accordingly, the specification at page 20, line 7 and claims 12 and 26 have been amended to overcome the rejection. The phrase “and their corresponding salts” has been deleted from the description at page 20, line 7.- Amended claims 12 and 26 recite the following:

12. (Currently Amended) The admixture composition of claim 1 wherein the set retarder is selected from the group consisting of an oxy-boron compound, a polyphosphonic acid, lignosulfonates, sulphonic acid-acrylic acid copolymer, and their corresponding salts, carboxylic acid, [a] hydroxycarboxylic acid, polycarboxylic acid, hydroxylated carboxylic acid, fumaric, itaconic, malonic, borax, gluconic, and tartaric acid, ~~lignosulfonates, ascorbic acid, isoascorbic acid, sulphonic acid-acrylic acid copolymer, and their corresponding salts, a carboxylic acid,~~ polyhydroxysilane, polyacrylamide, carbohydrates and mixtures thereof.

26. (Currently Amended) The cementitious composition of claim 15 wherein the set retarder is selected from the group consisting of an oxy-boron compound, a polyphosphonic acid, lignosulfonates, sulphonic acid-acrylic acid copolymer, and their corresponding salts, carboxylic acid, [a] hydroxycarboxylic acid, polycarboxylic acid, hydroxylated carboxylic acid, fumaric, itaconic, malonic, borax, gluconic, and tartaric acid, ~~lignosulfonates, ascorbic acid, isoascorbic acid, sulphonic acid-acrylic acid copolymer, and their corresponding salts, a carboxylic acid,~~ polyhydroxysilane, polyacrylamide, carbohydrates and mixtures thereof.

In view of the above amendments and remarks, Applicants respectfully request withdrawal of the 35 U.S.C. §102(b) rejection over Moreau of claims 1-3, 5-9, 12-17, 19-23 and 26-32.

35 U.S.C. §102(e)

Claims 1-3, 5-9, 12-17, 19-23 and 26-32 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application No. 2003/0127026 ("Anderson"). The Office Action mailed December 5, 2006 alleges at page 3 that Table A (page 8) of Anderson teaches 20-30% of the polycarboxylate dispersant, 30-50% polyhydroxylalkylamine, and 10-20% of the set retarder. It is alleged that this is consistent with the presently claimed ranges of 5-80%, 0.5-40% and 0.5-40%, respectively.

Applicants respectfully traverse. The ranges identified in the Office Action (set forth in Table A of Anderson) do not specify the weight percentage of the components in the high early-strength composition of admixtures. The ranges are the "approximate solids content, %" of each individual component, before mixing. "The approximate solids content **is the concentration of the solids in solution** and the primary active ingredient in the component provides the desired effect (i.e., set delay, acceleration, or reduced amount of water) on the cementitious composition." Anderson, Page 8, Paragraph 155.

Therefore, an approximate solids content of 30-50% for an accelerator means that the accelerator itself contains 30-50% solids in the accelerator solution. An example of a suitable accelerator is POZZOLITH® NC534. Page 7, Paragraph 142. Attached is page 1 of the Material Safety Data Sheet for POZZOLITH® NC534. It is a liquid that may contain 30-60% Calcium Nitrate and 1-5% Sodium Thiocyanate. Therefore, the range of 30-50% set forth in Table A does not identify an admixture containing 30-50% accelerator, but rather, an accelerator containing 30-50% dissolved or dispersed solids.

Therefore, Anderson teaches that the admixture composition is composed of 85-95% accelerator, 5-12% dispersant, and 0-2% retarder **based on solids** (dry) content. Page 8, Paragraph 156.

In contrast to Anderson, the admixture composition as claimed includes about 5 to about 80% polycarboxylate dispersant (Page 5, lines 17-19; Claim 2), about 0.5 to about 40% set retarder (Page 20, lines 9-10; Claim 2), and about 0.5 to about 40% strength improvement additive which may include a polyhydroxyalkylamine (Page 20, lines 26-28; Claim 2) based on the total dry weight of the admixture composition.

In Response B mailed September 27, 2006, Claims 1 and 15 were amended to incorporate the ranges of the components recited in dependent claim 2:

1. (Previously Presented) A strength improvement admixture composition comprising:
 - a. polycarboxylate dispersant;
 - b. set retarder; and
 - c. a strength improvement additive selected from the group consisting of poly(hydroxyalkylated)polyethyleneamines, poly(hydroxyalkylated)polyethylenepolyamines, poly(hydroxyalkylated)polyethyleneimines, poly(hydroxyalkylated)polyamines, hydrazines, 1,2-diaminopropane, polyglycoldiamine, poly(hydroxyalkyl)amines and mixtures thereof;
wherein the amount of polycarboxylate dispersant is from about 5% to about 80%, the set retarder is from about 0.5% to about 40%, and the strength improvement additive is from about 0.5% to about 40% based on the total dry weight of the admixture composition components.

15. (Previously Presented) A cementitious composition comprising hydraulic cement and a strength improvement admixture composition, said admixture composition comprising:
 - a. polycarboxylate dispersant;
 - b. set retarder; and
 - c. a strength improvement additive selected from the group consisting of a poly(hydroxyalkylated)polyethyleneamines, poly(hydroxyalkylated)polyethylenepolyamines, poly(hydroxyalkylated)polyethyleneimines,

poly(hydroxyalkylated)polyamines, hydrazines, 1,2-diaminopropane, polyglycoldiamine, poly(hydroxyalkyl)amines and mixtures thereof; wherein the amount of polycarboxylate dispersant is from about 5% to about 80%, the set retarder is from about 0.5% to about 40%, and the strength improvement additive is from about 0.5% to about 40% based on the total dry weight of the admixture composition components.

Applicants, therefore, respectfully request withdrawal of the 35 U.S.C. §102(e) rejection over Anderson of claims 1-3, 5-9, 12-17, 19-23 and 26-32.

In view of the above amendments and remarks, Applicants respectfully request the 35 U.S.C. §102(b) and (e) rejections be withdrawn, and that the Examiner issue a formal notice of allowance directed to claims 1, 3-32.

Should the Examiner have any questions regarding the remarks set forth herein, Applicants' undersigned attorney would welcome a telephone call. An early Advisory Action is earnestly solicited if any clarification is required.

Respectfully submitted,



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Date

Material Safety Data Sheet



POZZOLITH® NC 534 (AKA: CONSET NC)

Version 2.3

06/27/2006

1. PRODUCT AND COMPANY INFORMATION

Company : **BASF Corporation**
23700 Chagrin Blvd
BEACHWOOD, OH 44122

Telephone : 216-839-7500

Emergency telephone number : (800) 424-9300
(703) 527-3887 (Outside Continental US)

Product name : POZZOLITH® NC 534 (AKA: CONSET NC)

MSDS ID No. : 10033

TSCA Inventory : All components of this product are included, or are exempt from inclusion, in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Canadian DSL : All components of this product are included, or are exempt from inclusion, in the Canadian Domestic Substance List (DSL).

2. HAZARDOUS INGREDIENTS

<u>Chemical</u>	<u>CAS No.</u>	<u>TLV</u>	<u>STEL</u>	<u>PEL</u>	<u>CEIL</u>	<u>Weight %</u>
CALCIUM(II) NITRATE (1:2)	10124-37-5		N.E.	N.E.	N.E.	30.00 - 60.00 %
SODIUM THIOCYANATE	540-72-7	N.E.	N.E.	N.E.	N.E.	1.00 - 5.00 %

3. HAZARDS IDENTIFICATION

HMIS® Rating : HEALTH 2 FLAMMABILITY 0 PHYSICAL HAZARD 0

WHMIS Class : D2B

Primary Routes of Entry : Inhalation
Eye contact
Skin contact

Effects of Overexposure

Inhalation : Vapors can be irritating to respiratory tract and mucous membranes.

Skin : Can cause slight to moderate irritation. Prolonged or repeated skin contact tends to remove skin oils possibly leading to irritation and dermatitis.

Eyes : Can cause slight to moderate transient irritation, redness, tearing and blurred vision.

Ingestion : Intake can cause gastrointestinal irritation and nausea.

Chronic exposure : No known information available.